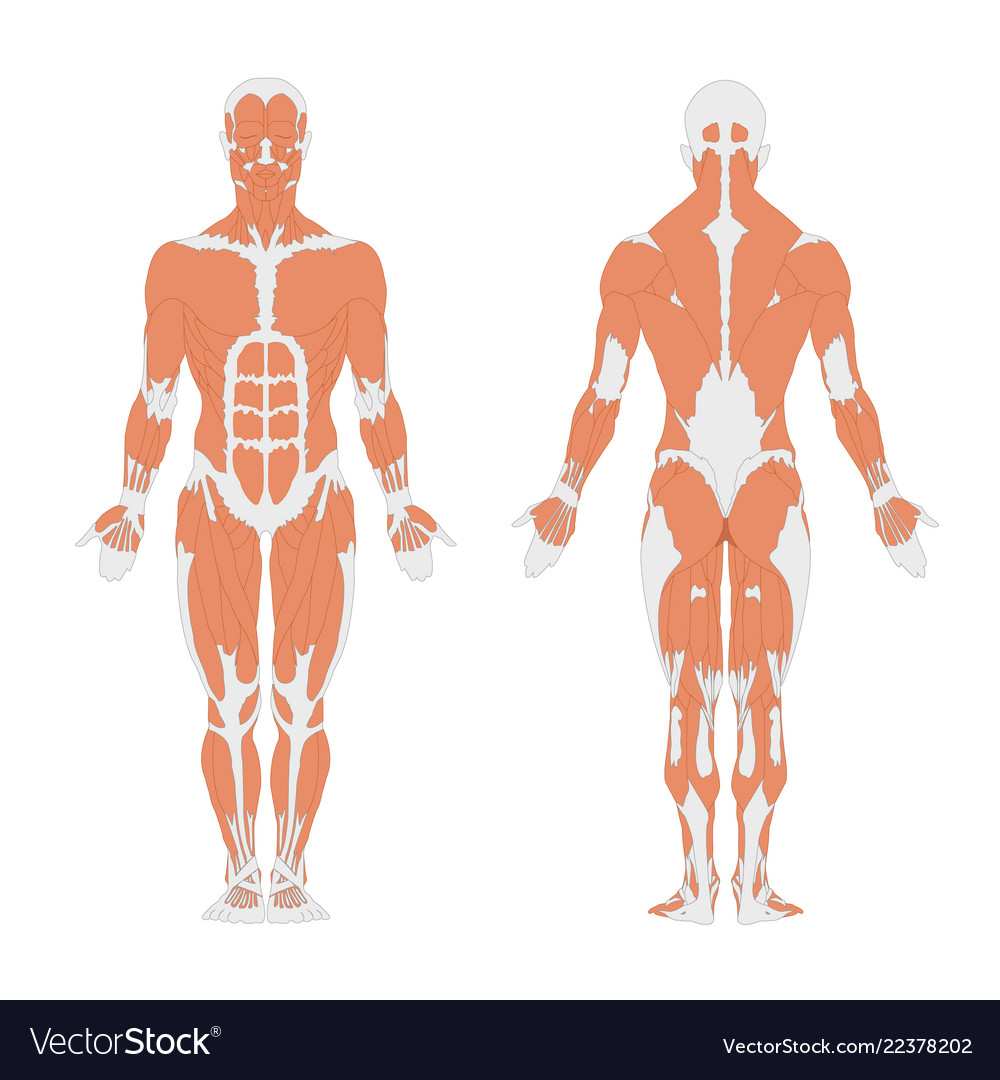
**PE – Muscular and Skeletal System Booklet**

**The Structure and Function of the Muscular System**



**Muscular System**

**You must be able to name and locate the following muscles:**

**• deltoid • trapezius • latissimus dorsi • pectorals • biceps • triceps • abdominals • quadriceps • hamstrings • gluteals • gastrocnemius**

**Deltoid –** a thick triangular muscle covering the shoulder joint and used for raising the arm away from the body.

**Trapezius –** large triangular muscles extending over the back of the neck and shoulders and moving the head and shoulder blade.

**Latissimus dorsi –** muscle chiefly of the middle and lower back that extends, adducts, and rotates the arm medially and draws the shoulder downward and backward.

**Pectorals –** muscles that cover the front of the ribcage and serve to draw the forelimbs towards the chest.

**Biceps –** A **muscle** with two heads or points of origin. The large **muscle** at the front of the upper arm that flexes the forearm.

**Triceps –** The **muscle** that extends (straightens) the forearm.

**Abdominals –** A large group of **muscles** in the front of the **abdomen** that assists in the regular breathing movement and supports the **muscles** of the spine while lifting and keeping **abdominal** organs such as the intestines in place.

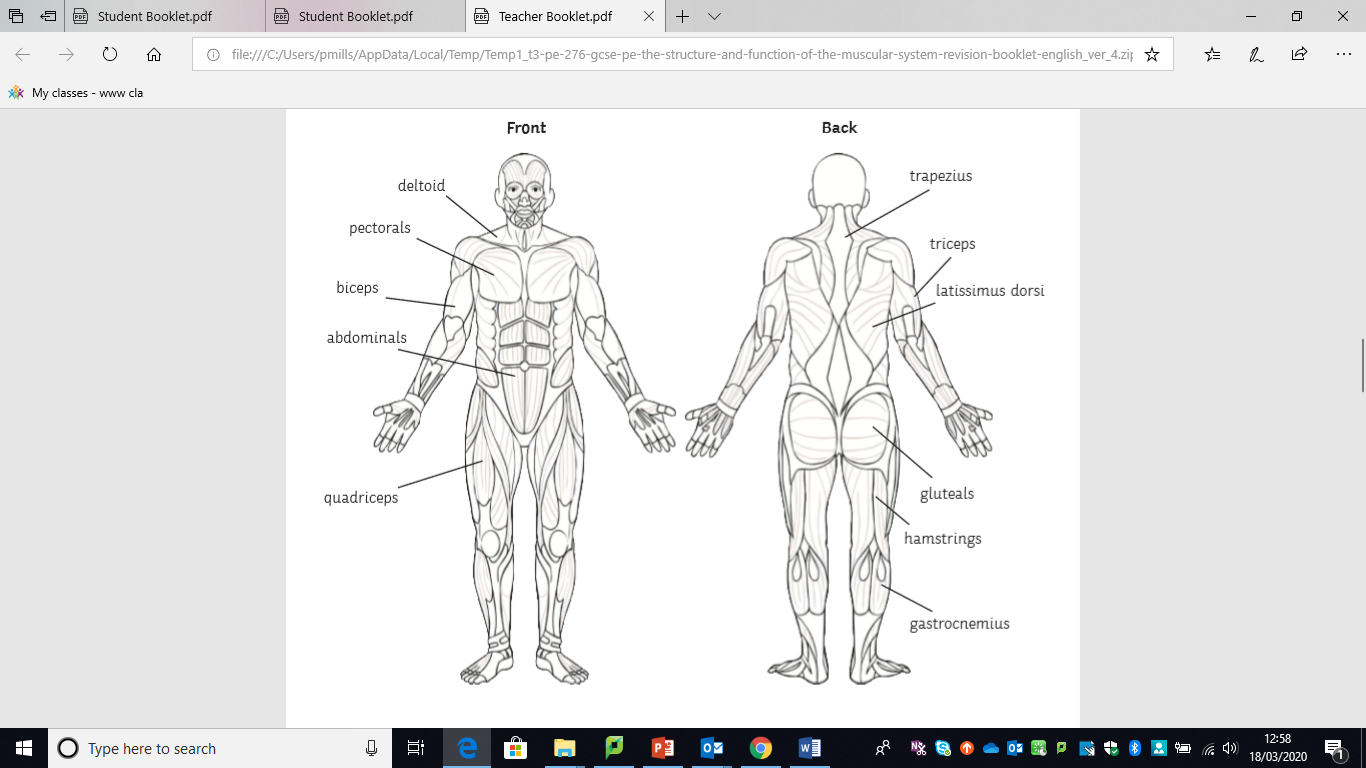
**Qudriceps –** large fleshy **muscle** group covering the front and sides of the thigh.

**Hamstrings – muscles** at the back of the thigh that function to flex and rotate the leg and extend the thigh:

**Gluteals –** The **gluteal muscles** are a group of three **muscles** which make up the buttocks

**Gastrocnemius -** the chief muscle of the calf of the leg, which flexes the knee and foot. It runs to the Achilles tendon from two heads attached to the femur

**Major muscles of the body**



**Muscles and Sporting Examples**

|  |  |  |
| --- | --- | --- |
| **Muscle** | **Muscle Movement** | **Sporting Example** |
| **Deltoiod** | **Flexion, extension, abduction** | **Blocking the ball in volleyball with arms straight above the head.** |
| **Trapezius** | **Abduction of shoulder** | **Arm moving back as an athlete prepares to throw a discus** |
| **Latissmus dorsi** | **Adduction** | **Bringing your arms into your body during a star jump.** |
| **Pectorals** | **Adduction, flexion** | **Tackling in rugby to hold onto an opponent.** |
| **Biceps** | **Flexion** | **Upward movement in a bicep curl.** |
| **Triceps** | **Extension** | **Downward movement in a bicep curl.** |
| **Abdominals** | **Flexion** | **A sit-up** |
| **Quadriceps** | **Extension** | **Extension of the leg at the knee to kick a football.** |
| **Hamstring** | **Flexion** | **Bending at the knee when preparing to kick a football.** |
| **Gluteals** | **Extension, Abduction, Rotation** | **Sprinter as they sprint down a 100m track.** |
| **Gastrocnemius** | **Flexion (pointing of toes)** | **A gymnast pointing their toes during a cartwheel** |

**Skeletal System**

**You must be able to name and locate the following bones:**

**• neck vertebra • vertebra • radius • rib • humerus • ulna • femur • tibia • fibula • wrist • kneecap**

**Neck Vertebra -** is comprised of seven **vertebral** bodies that make up the upper most part of the **spine**. These **vertebrae** connect the **spine** to the skull.

**Vertabra** - The 33 vertebrae that fit together to form a flexible, yet extraordinarily tough, column that serves to support the back through a full range of motion.

**Radius** - The **radius** or **radial bone** is one of the two large **bones** of the forearm, the other being the ulna.

**Ribs** - are the long curved **bones** which form the **rib** cage, part of the axial skeleton. In humans, **ribs** surround the chest, enabling the lungs to expand and thus facilitate breathing by expanding the chest cavity.

**Humerus** - The **humerus** is the long **bone** in the upper arm. It is located between the elbow joint and the shoulder.

**Ulna** - The **ulna** is a long **bone** found in the forearm that stretches from the elbow to the smallest finger.

**Femur** - The **femur** is the only **bone** located within the human thigh. It is both the longest and the strongest **bone** in the human body, extending from the hip to the knee.

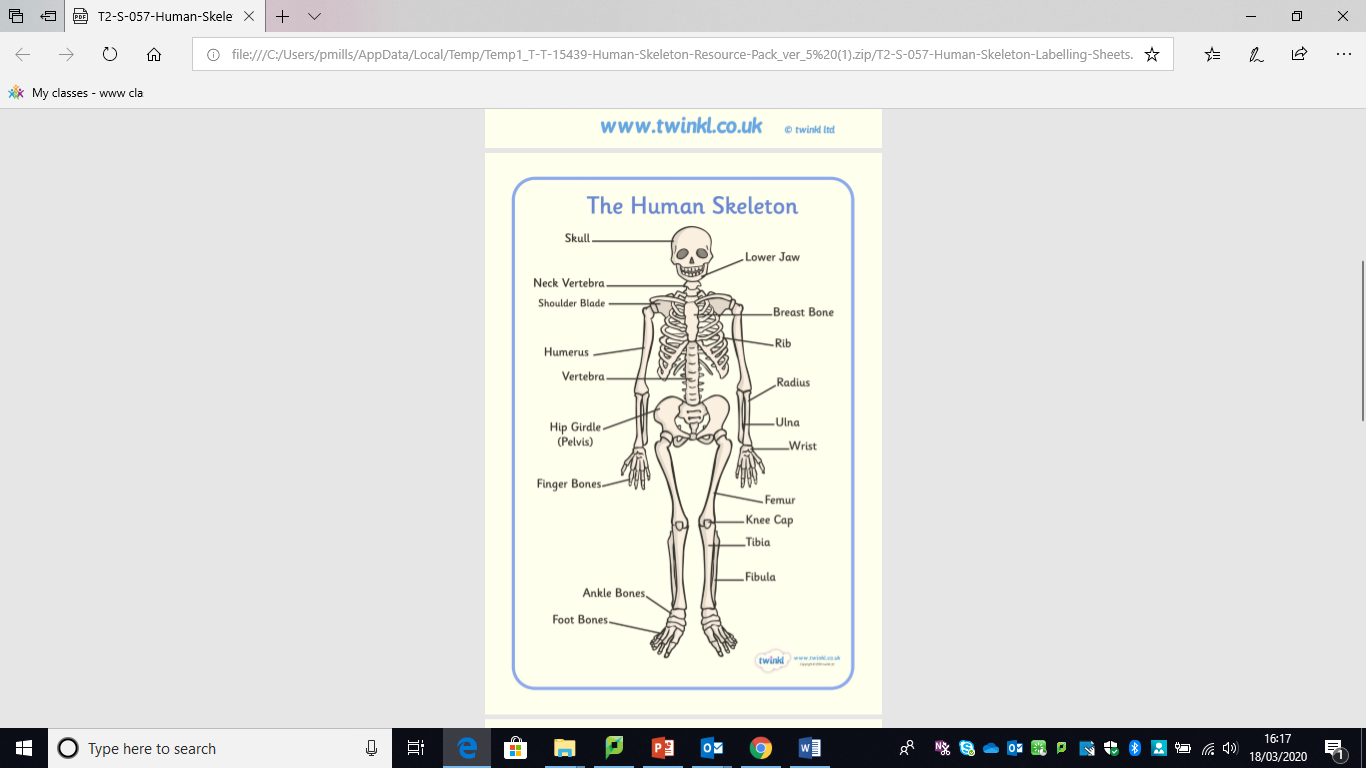
**Tibia** - also known as the shinbone or shank-bone, is the larger, stronger, and anterior (frontal) of the two **bones** in the leg below the knee in vertebrates (the other being the fibula, behind and to the outside of the **tibia**), and it connects the knee with the ankle **bones**.

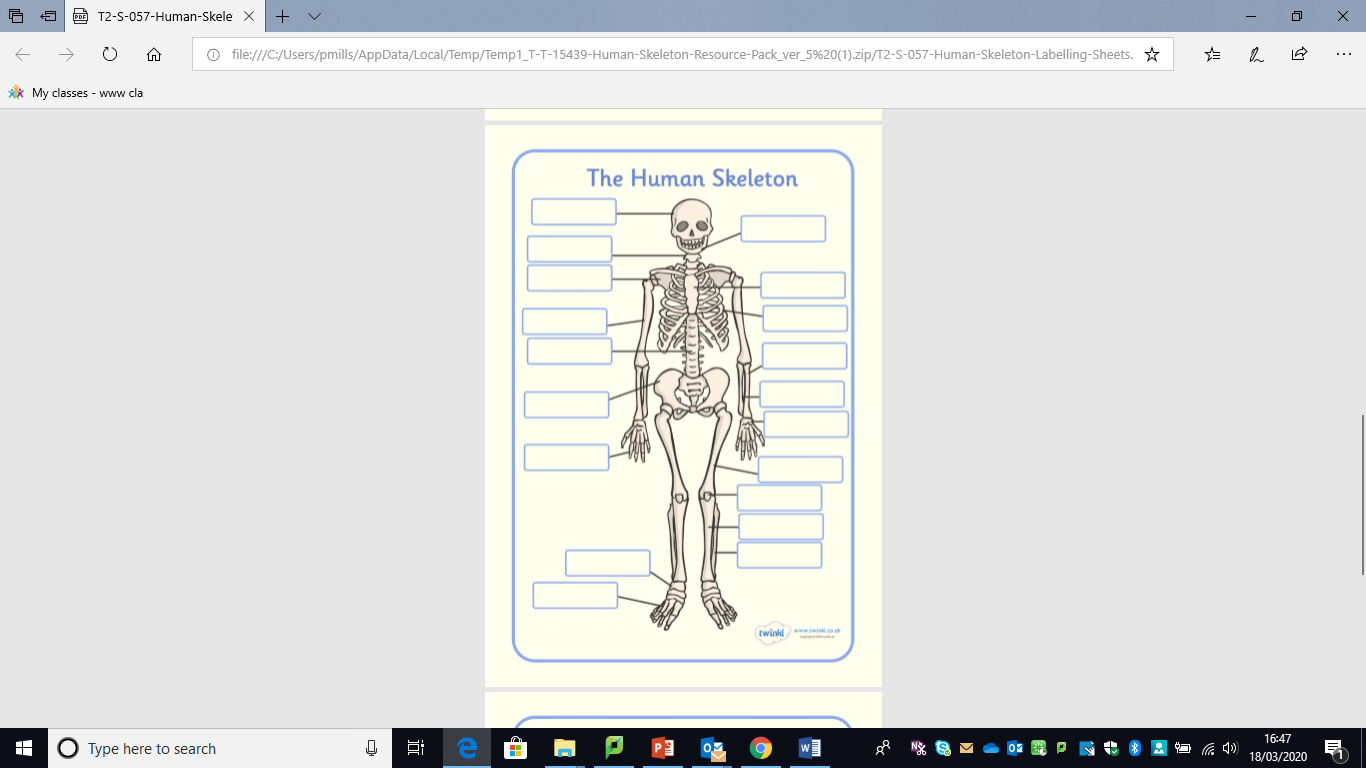
**Fibula** - The **fibula** or calf **bone** is a leg **bone** on the lateral side of the tibia, to which it is connected above and below. It is the smaller of the two **bones** and, in proportion to its length, the slenderest of all the long **bones**.

**Wrist** – connects the hand to the forearm.

**Kneecap** - The **patella**, also known as the **kneecap**, is a flat, circular-triangular **bone** which articulates with the femur (thigh **bone**) and covers and protects the anterior articular surface of the knee joint.

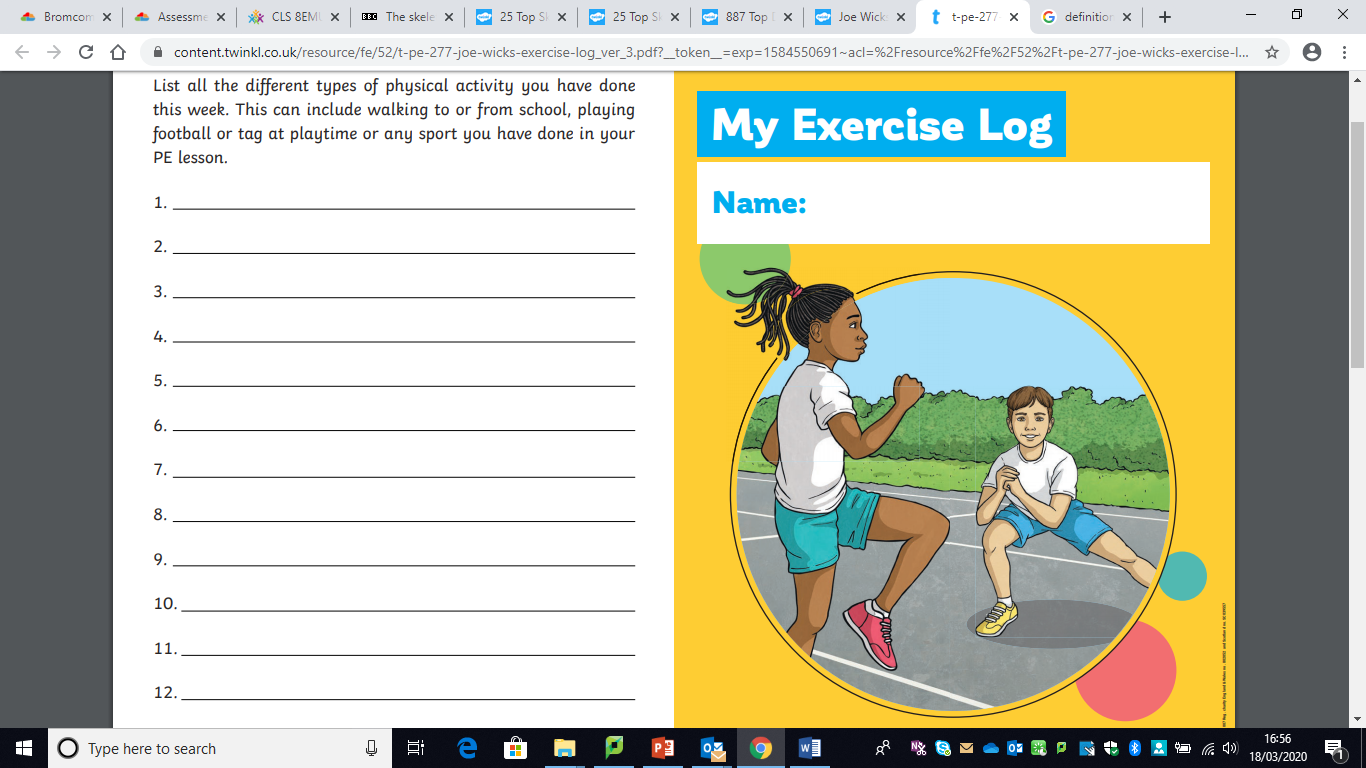
**The Skeletal System**





**Physical Activity Log**

**List all of the physical activity you have taken part in this week, from walking to and from somewhere to playing football or just exercising in the house.**



**Fitness Tracker**

**Keep a record of all the exercise you do each day from now.**

|  |  |  |
| --- | --- | --- |
|  | **Type of Exercise** | **Total (Minutes)** |
| **Monday** |  |  |
| **Tuesday** |  |  |
| **Wednesday** |  |  |
| **Thursday** |  |  |
| **Friday** |  |  |
| **Saturday** |  |  |

